

## Overview

### Useful For

Diagnosing congenital deficiency of coagulation factor VII

Evaluating acquired deficiencies associated with liver disease, oral anticoagulant therapy, and vitamin K deficiency

Determining degree of anticoagulation with warfarin to correlate with level of protein C

Investigation of a prolonged prothrombin time

### Special Instructions

- [Coagulation Guidelines for Specimen Handling and Processing](#)

### Method Name

Optical Clot-Based

### NY State Available

Yes

## Specimen

### Specimen Type

Plasma Na Cit

### Advisory Information

Coagulation testing is highly complex, often requiring the performance of multiple assays and correlation with clinical information. For that reason we suggest ordering Coagulation Consultations.

### Necessary Information

If priority specimen, mark request form, give reason, and request a call-back.

### Specimen Required

See [Coagulation Guidelines for Specimen Handling and Processing](#) in Special Instructions.

**Specimen Type:** Platelet-poor plasma

**Patient Preparation:** Patient must not be receiving Coumadin or heparin therapy.

**Collection Container/Tube:** Light-blue top (citrate)

**Submission Container/Tube:** Plastic vial

**Specimen Volume:** 1 mL

### Collection Instructions:

1. Within 4 hours of collection, centrifuge, transfer all plasma into a plastic vial, and centrifuge plasma again. Aliquot plasma into separate plastic vial leaving 0.25 mL in the bottom of centrifuged vial.

2. Freeze plasma immediately at -20 degrees C, or, ideally at < or = -40 degrees C.

**Additional Information:**

1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results.
2. Each coagulation assay requested should have its own vial.

**Forms**

[If not ordering electronically, complete, print, and send a Coagulation Test Request \(T753\)](#) with the specimen.

**Specimen Minimum Volume**

0.5 mL

**Reject Due To**

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject

**Specimen Stability Information**

Specimen Type	Temperature	Time	Special Container
Plasma Na Cit	Frozen	14 days	

**Clinical and Interpretive**

**Clinical Information**

Factor VII is a vitamin K-dependent serine protease synthesized in the liver. It is a component of the extrinsic coagulation scheme, measured by the prothrombin time. Plasma biological half-life is about 3 to 6 hours. Deficiency may result in a bleeding diathesis.

**Reference Values**

Adults: 65-180%

Normal, full-term newborn infants or healthy premature infants may have decreased levels (> or =20%) which increase within the first postnatal week but may not reach adult levels for > or =180 days postnatal.\*

\*See Pediatric Hemostasis References section in [Coagulation Guidelines for Specimen Handling and Processing](#) in Special Instructions.

**Interpretation**

Liver disease, vitamin K deficiency, or warfarin anticoagulation can cause decreased factor VII activity.

Heterozygotes generally have levels of < or =50%.

Homozygotes have levels usually <20%.

Newborn infants usually have levels > or =25%.

### Cautions

Factor VII is the first vitamin K-dependent coagulation factor to decrease after starting warfarin therapy and one of the first to return to normal when anticoagulation is discontinued.

### Clinical Reference

1. Girolami A, Scandellari R, Scapin M, Vettore S: Congenital bleeding disorders of the vitamin K-dependent clotting factors. *Vitam Horm* 2008;78:281-374
2. Brenner B, Kuperman AA, Watzka M, Oldenburg J: Vitamin K-dependent coagulation factors deficiency. *Semin Thromb Hemost* 2009 Jun;35(4):439-446
3. Mariani G, Bernardi F: Factor VII deficiency. *Semin Thromb Hemost* 2009 Jun;35(4):400-406

### Performance

#### Method Description

[The factor VII assay is performed on the Instrumentation Laboratory ACL TOP using the prothrombin time \(PT\) method and a factor-deficient substrate. Patient plasma is combined and incubated with a factor VII-deficient substrate \(normal plasma depleted of factor VII by immunoabsorption\). After a specified incubation time, a PT reagent is added to trigger the coagulation process in the mixture. Then the time to clot formation is measured optically at a wavelength of 671 nm.](#) (Owen CA Jr, Bowie EJW, Thompson JH Jr: *Diagnosis of Bleeding Disorders*. Second edition. Little, Brown and Company, Boston, MA. 1975; Meijer P, Verbruggen and Spannagi M: Chapter 33: Clotting factors and inhibitors: Assays and Interpretation. In *Laboratory Hematology Practice*. Edited by K Kottke-Marchant. Wiley Blackwell Publishing, 2012, pp 435-446)

#### PDF Report

No

#### Day(s) and Time(s) Test Performed

Monday through Friday

#### Analytic Time

1 day

#### Maximum Laboratory Time

3 days

#### Specimen Retention Time

7 days

#### Performing Laboratory Location

Rochester

### Fees and Codes

#### Fees

- Authorized users can sign in to [Test Prices](#) for detailed fee information.
- Clients without access to Test Prices can contact [Customer Service](#) 24 hours a day, seven days a week.

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- Prospective clients should contact their Regional Manager. For assistance, contact [Customer Service](#).

**Test Classification**

This test has been modified from the manufacturer's instructions. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

**CPT Code Information**

85230

**LOINC® Information**

Test ID	Test Order Name	Order LOINC Value
F_7	Coag Factor VII Assay, P	3198-9

Result ID	Test Result Name	Result LOINC Value
F_7	Coag Factor VII Assay, P	3198-9